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## NEW DIURNAL LEPIDOPTERA FROM BOLIVIA.

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*Papilio Cochabamba*, sp. nov.

Habitat: Bolivia. Expanse, 4.00 inches.

Front of head dark, greenish black. Between the eyes, two dots of greenish white, and another dot at "collar," followed by two more similar dots on front of thorax. Antennæ, greenish black, extreme point slightly brownish. Thorax, above, dark greenish black; beneath, black with a large yellowish spot at base of costal nervule, another also at base of costal nervule of hind wing, both with a small white dot above them. Legs, black above; beneath, whitish, the white extending on to thorax as a dash.

Abdomen above, greenish cream colour (very prominent), black tip. Below, black with a white spot at base of each segment on both sides. Between these spots and the cream colour of upper part, are a series of yellowish dashes.

Fore wings above, greenish black, but with a decided greenish lustre covering outer half. The interspaces at hind margin edged with white.

Hind wings of same ground colour, the greenish lustre being somewhat brighter and more prominent. Covering nearly the whole of the subcostal space is a large dash of greenish white, followed by a row of similar, although smaller, spots or dashes extending in a *straight line*, from apex to anal angle, each about one-eighth inch wide and one-eighth inch long, diminishing in size towards anal angle. These are about one-third inch from hind margin, not touching, however, the discoidal space, and form the only prominent marking of the insect. The hind margin is strongly dentated with interspaces bordered by a white line.

Under side of fore wings: black, shading into gray black at a line drawn from inner angle across the wing towards outer part of discoidal cell. In the three lower interspaces, one-fourth inch from hind margin is a patch of whitish scales, suggestive of spots.

Under side of hind wings is entirely of bronze colour, somewhat lustrous, excepting at the top portion of each interspace, where there is a whitish spot, and inside of that, one-sixteenth inch from margin, a semicircle of brick colour, very prominent. The dentations of the wing bear the white linear border appearing on upper side.

The specimens in my possession were taken some two hundred miles north from Cochabamba. In general appearance, it resembles closely *Papilio Numitor*, Cram., and that group, and may be a climatic variation of it, but in *Numitor* the greenish-white dashes on hind wing follow more closely the contour of the hind margin, while in this these dashes are more in line with a line drawn from apex to anal angle. My specimens are invariable, showing no difference in the suffusion or size of dashes.

*Dynamine albidula*, sp. nov.

Habitat : Bolivia, near Sicasica. Expanse, 1.25 inches.

Head, palpi, thorax and abdomen above, blackish with gray hairs ; beneath, nearly white. Antennæ, black with white annulations at the base of each joint. Club, tipped with tawny. Legs, white.

The lower portion of the fore wing is white, from a line drawn from a point close to the base on inner margin, and extending upwards to and along the median nervure to end of discoidal space, then curving downwards to lower angle, meeting inner margin one-sixteenth inch from angle. The rest of the wing is black with white spots. The discoidal space is heavily dusted with lustrous greenish-blue scales. In the centre of the space is a small white spot. Midway between apex and base is a large white spot, extending from costa towards hind margin, and directly over the summit of the lower white area. Just within hind margin, one-third distance from apex to lower angle, is a smaller white spot, and there is another below it, one-third distance from lower angle to apex. The latter of these merges into the white area of the lower portion of the wing.

Upper side of lower wing is entirely white, excepting a small area of black at the very base, and a narrow border of black along hind margin. This border is black at the upper angle, and turns to grayish at the lower half, disappearing entirely just before it reaches anal angle. Outside of this, on the edge of the margin, is a white thread.

The white area of upper side of fore wing is duplicated on under side. The black of the upper side gives way to a great extent to tawny. The discoidal space is jet black at its upper portion, tawny at basal portion,

the black extending down along the median nervure towards base. In the centre of the black area is a white spot. Separating the black from the tawny is a thread of very lustrous greenish-blue, nearly silver. This tawny colour extends to costa, the costa being tawny up to apex. A greenish-blue lustrous line extends from base along costa for one-quarter inch. The large white spot of upper surface is repeated. The first white spot at hind margin of upper surface is repeated, but suffuses strongly upwards to the costa, forming an apical band of white. At inner edge of this band is a heavy tawny line, the costal and lower portion of it tipped with lustrous greenish-blue scales. The lower white spot is the same as on upper surface. The hind margin has a black thread at its edge, and within this a line of tawny, edged on its inner side by a thread of the lustrous scales.

The lower side of lower wings is the same as upper surface, except the black is replaced by tawny, and the marginal border is edged on its inner side by a thread of lustrous greenish-blue, with a suggestion of a black thread within it.

Type, one specimen ; taken October 1st, 1899.

*Amarynthia muscolor*, sp. nov.

Habitat : Bolivia, five days travel north from Cochabamba. Expanse, 1.25 inches.

Head, thorax and abdomen, nearly black, with approach to dark mouse colour on top. Antennæ, black, with slight white annulations at base of each joint. Legs, black.

General ground colour of upper surface, a dark mouse colour, with black markings. Costa of fore wings of ground colour. Hind margin, without border, except a slight linear black line and a fringe of hairs. One-eighth inch within margin is a semi-distinct black line, extending from tip down to inner margin, and another the same distance within this. The discoidal space contains four distinct black transverse lines, the outer two joining at top and bottom, forming an egg-shaped figure. From the lower junction of these, a black line extends downwards at right angles to the costa to the submedian nervule. The inner two of these discoidal lines do not join, but each extends downwards to submedian nervule. There is a suggestion of still another line, nearer the base, extending also to the submedian nervule.

Upper surface of hind wings nearly duplicates that of fore wings. The hind margin with its two inner lines and hairy fringe is the same.

The inner line forms a continuation of the line of fore wings which extends downwards from the egg-shaped figure, noted above. The outer line of the inner two lines mentioned as crossing the discoidal space of fore wings extends across the wing from costa to anal angle, where it joins the two broader lines. Within this, in discoidal space, are three lines, and a suggestion of a fourth near the joint. Inner margin, of ground colour, fringed with hairs.

The under surface is brilliant, the outer half of both wings being sky blue with a mother-of-pearl lustre. The costa of fore wing is mouse colour, with a linear dash of sky blue extending upwards from base. Hind margin is same as on upper surface, except that the slight hairy fringe shows whitish. The inner half of wing is blue-black. The dividing line between the inner and outer half is broken at the first median nervule, forming a jut. The discoidal space contains four sky blue spots, the second and fourth from the base being very prominent. Below the second one, above the submedian nervure, is another spot of the same colour. The space above inner margin is mouse colour, somewhat suffusing the blue-black of inner half of wing.

Under surface of hind wings much the same. The border of hind margin is same as on fore wings, but the first border line of the upper surface is duplicated. The line separating the blue-black and sky blue is continuous, extending from midway between apex and base to anal angle. The discoidal space contains but two sky blue marks, which are duplicated in a less degree in the space next below. The inner one is also duplicated similarly in the space above the discoidal space. The sky blue of outer half of wing extends upwards somewhat, along inner margin, and also suffuses the lower portion of the blue-black ground.

Described from three specimens in my collection from Cochabamba district, 1899.

*Eurybia hari*, sp. nov.

Habitat: Bolivia, north of Cochabamba. Expanse, 2.15 inches.

Head and eyes, dark fulvous brown, with a "collar" of reddish-brown yellow. Antennæ, nearly black, with yellowish points. Thorax and abdomen, dark mouse colour, somewhat lighter underneath. Legs, the same.

General ground colour of wings, dark mouse colour, with a border (interspacing) of reddish-brown yellow, covering nearly one-third of both fore and hind wings.

Costa of fore wings, dark mouse colour. Inner two-thirds of wing the same, excepting a prominent black spot in discoidal space, surrounded by a reddish-brown yellow ring, and outside of this a semicircle of same colour. Hind margin has a linear border of ground colour. The interspaces of hind margin contain a dash of reddish-brown yellow extending as far as discoidal space in upper three interspaces and paralleling downwards. These dashes form practically a broad band covering outer third of wing, the nervures of ground colour only showing between them. The outer end of these dashes contains a black arrow-head, small at top interspace, and increasing in size in lower interspaces. The inner end of these dashes contains a black dash, increasing in size in lower interspaces.

The hind wings duplicate these markings, with the following exceptions: The discoidal spot is much less prominent. The semicircle outside of it is missing. The linear border is also missing, the reddish-brown yellow extending clearly to margin.

The under side of both wings is the same as upper side, excepting that the ground colour is much lighter, and the yellowish portions suffused somewhat with ground colour. The discoidal spots are more prominent owing to the lighter shade of the background, rather than to any change of their own.

The general appearance is close to *Eurybia Jemina*, Hew.

Described from two specimens in my collection, secured by my collector, Mr. William J. Gerhard, at a point five days north from Cochabamba, Bolivia. In all the collections examined, including the largest collections in this country and in England, only one of this species was found, that being in Mr. Hewitson's collection, unnamed.

#### THE COLORADO POTATO BEETLE IN ENGLAND.

Although the announcement that the Colorado beetle had been discovered at Tilbury Docks (near London) must have given rise to some apprehension on the part of agriculturists in general, and potato-growers in particular, we are able to state, as the result of inquiries, that there now exists no cause for alarm, the prompt action of the Board of Agriculture having succeeded in exterminating, so far as is possible to judge, the dangerous insect. Little, if any, damage was done by this visitation, which seems to be the first for fifteen or twenty years. The land around Tilbury Docks is not agricultural, and if potatoes are